Rec'd March 12th 1862
Ans'd 13th

Wilmington Del
March 7th 1862

Dr George Engelmann

Dear Sir

I take the liberty of sending you two species of Cuscuta of the names of which I am uncertain. No 1 was communicated by Mr S. H. Watson of Madison, Wisconsin. under the name of C. umbrosa, Bey. No 2. I collected in the Pine barrens of New Jersey and have supposed it might be a form of C. compacta, Juss.; but it differs somewhat from the plant of this neighborhood especially in the very long cylindrical tube of the corolla and the more pointed lobes. The clusters are also less dense. If you will be kind enough to send me the names I shall be much indebted & am

Yours truly

Wm M. Canby

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Rec'd Oct 30th
Ans Nov 1st

Chaddsford P.O. Delaware Co. Penn.
Oct 27th 1862

Dr George Engelmann,

Dr Sir,

Enclosed are specimens of two plants; one a Leucaeta, which I have supposed to be Eryn L. chlorocarpa, and which I collected last month in the Pine Barrens of New Jersey. Many of the flowers were 3-parted; others 4-parted. — The other, collected on the shores of the Delaware near low water mark, in New Castle Co., Delaware, I have taken for your Sarothra ripania. As I wish to send out specimens in the way of exchange, you will greatly oblige me, by informing me if I am correct in the above names. Also, whether you state that the Hypericum gymnanthum, Engelm & Gray, Ats Smith, (which I have collected in Delaware this season, fide Dr Gray), is the

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sufficiently distinct from H. mutilum. L.
Dr Gray is not satisfied that it
is, but if not, it seems to me to deserve
some attention as a marked variety.

Very Respectfully
Yours,
Wm M. Canby

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Rec'd May 31st
Ans same day

Shaddsford Del. Co Penn.a
May 26th 1863

Dear Sir,

Having been desired by Mr Durand through Edward Tatnall, to get some specimens of Pines in a flowering state and send to you, I have today collected some of P. rigida & P. inops, which are the only species which grow in this neighborhood. I will send them with this tomorrow. I also take this opportunity to say, in answer to a request made last winter, that I have seen the pubescent var. of Sagittaria variabilis growing, and will endeavour to get some for you this summer.

Very Resp.y
Wm M. Canby

Dr Engelmann

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Rec'd June 19th
Ans Aug 8

Chadds ford June 15th 1863

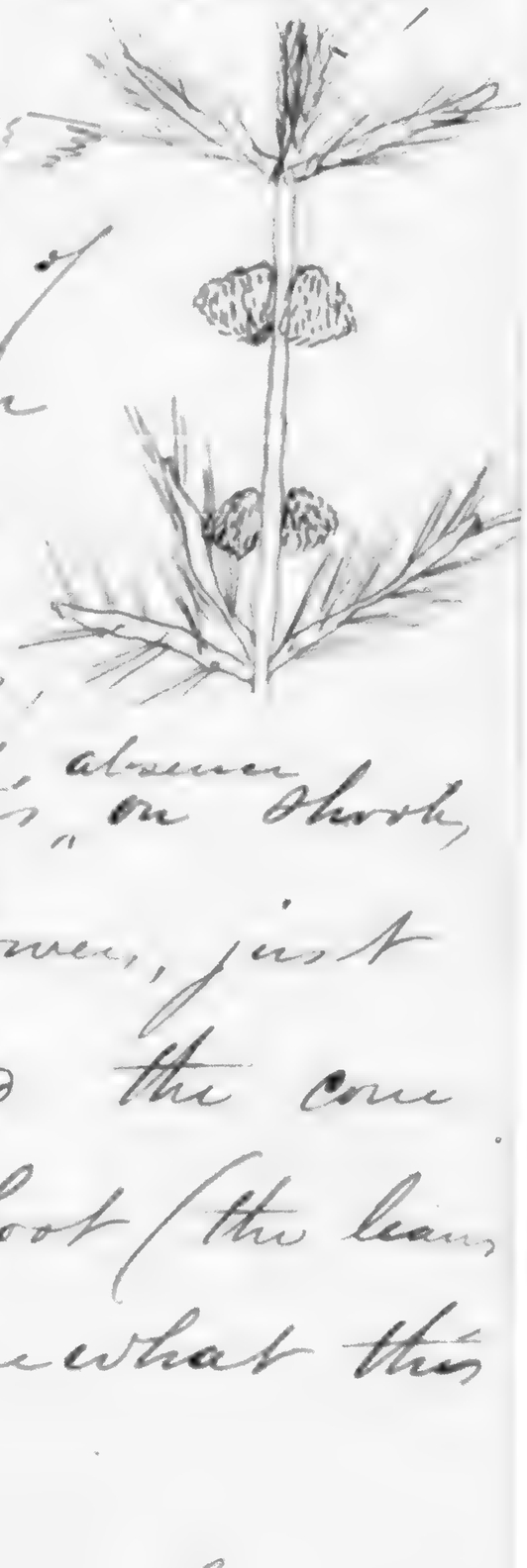
Dr Engelmann

Dear Sir

I have your favor of May 31st and the pamphlet, which is very interesting & useful, especially the part relating to Pinus & Abies Thanks. Pl, and for which I am truly obliged. In answer to your request for specimens, I send what I have been able to procure, viz., male fls of both Larices, ditto of P. Strobus, - ditto of Abies Canadensis & A. balsamea, fls of A. alba, and fls of a pine, called by Nuttall P. pumila, but? It is seemingly nearly allied to P. dyspnetica, but as far as the flowers are concerned, differs in their female ones being on erect pedicels, which, however, in fl are recurved. You are doubtless well acquainted with it. It flowers when 4 ft high. With regard to the fem. fls of Pinus inops & rigida, being la-

teal, I have long noticed it and have supposed it might be the case with other species, and that, "petite catkins terminal", might be one of the loose descriptions often met with. During a day's botanizing in the Barrens of N.J. last week, I paid special attention to these two species above mentioned, and am able to say in regard to them, that the very rarely indeed have the female fls terminal, — as near as I could judge, not more than once in a hundred cases. Generally the fls were from 1 inch to 6 inches below the summit of the shoot, sometimes more than the latter, and more rarely, less than the former. I also looked at the old cones, which are very persistent, and verified the above. Sometimes the next spring after the fem. fls. are formed, a small shoot or two (generally in case there is but one cone), shoot out opposite the cone, and thus gives a slight

appearance of the cones being terminal, which however close examination readily shows not to be the case. In two cases I noticed cones of the same year, at different heights on the same shoot, as I have endeavoured to show in both. I believe being specimens of P. rigida. Generally, just when the female fls. appear on the shoot, there is an absence of leaves, and I frequently noticed this absence on shoots upon which there were no flowers, just as if something had prevented the cone buds from developing. The shoot (the leaves being young) would have somewhat this appearance.



I enclose three other specimens; viz. a Juncus from dry ground Canada U.S. A European graft introduced with lawn grass seed: and a plant collected on cliffs, on the Snow River, Mont.

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formerly beg Virginia, in August, 1858.
The letter was sent to Dr Gray through Mr
Talcott but was returned without name.
Then seems to be made a general resem-
blance to Rachystima Myrsinites, Raf. (Fl. 92.
Hall & Harbour) that I send it thinking you
may make something of it.
Please inform me of the name,
of the above and oblige, Yours, truly
Jno. M. Canby

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Rec'd July 31st
Ans'd Aug 8

Shaddsford July 27th 1863

Dr Engelmann

Dr Sir

Five or six weeks since I sent to you a letter, enclosing specimens of several species of Asteæ, in answer to your request of May 31; I also sent notes of observations on two species of Pinus; Vz, mops, & rigida; there were also enclosed, specimens of an introduced European grass, a Juncus, and a plant collected on the Mts of S.W. Virginia in 1858. As I have not since heard from you, I conclude that this package has not been received, and I regret the loss very much, especially as I have mislaid my note-book, and shall have to write of Pinus mitis rigida from memory; and state more as an acp of the Virginia plant, which Dr Gray sent back to Mr Tatnall, [illegible]

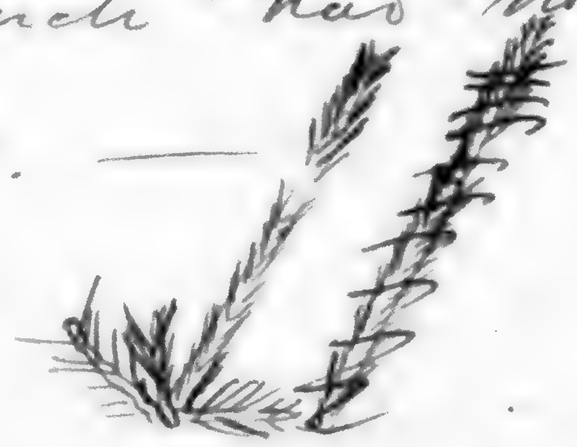
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whom I sent it to him) without name.
It was without fl or fr, but so strongly
resembles Pachystema myrsinites, Raf. (which
I have first seen in Dale & Bowling's coll.),
that I wished to have your opinion on
it. I will try to send you one of the
two specimens I have left, by some
safe opportunity than the mail, as also
other specimens. With regard to the
two pins, the gist of my observations,
made during a Botanical excursion to
N.J. was, that the female fls are ter-
minal in not more than five cases
in every hundred; that they are usu-
ally, from one to six inches below
the summit of the shoot, and often
more, than half the average distance.
This was evident as much from
the old cone, as from the fls, and
in two cases, (both I think of P. ri-
gida), there were two cones on the same
shoot, one some distance above the
other: as [illegible] Sometimes the



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next year after the flowers are formed, a small shoot puts out opposite the corm or corms, which gives them a slight appearance of being terminal, which however close observation shows not to be the case. In other cases I noticed a space on the young shoot, clear of leaves, looking as if intended for flowers, which had not developed. Somewhat thus. —



I am inclined to think Iris Iaeda may come under the same rule, though perhaps not in so great measure. Two days since I collected specimens from young tubers, in central Delaware, some of which I enclose. The flowers are probably too old to be of use.

The above facts seem very interesting, taken in connection with Darwin's work thereon.

I enclose also a buccata collected in Nelson Castle by Del, which

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I suppose the L. arvensis, Bigs.,
I should be glad to be certain of
this. I have my eye on a small
lot of Sagittaria variabilis var
fruticosa, which I hope to get
for you.

Very Respectfully
Wm. H. Canby

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Rec'd Aug 28th
Ans Sept 29th

Chaddsford Aug 25th 1863

Dr Engelmann

Dr Sir

I have your favor of the 8th inst and am obliged for the names of plants sent to you, as well as for the two lists of different flowering Pines which is very interesting. I expect to leave in a few days for a Botanical tramp in the lower part of Delaware & the Eastern Shore of Maryland & perhaps Virginia and will pay particular attention to the Pines which may be expected & he met with them including I hope P. mitis which I have never seen. I do not think I have at present such specimens of the different pines as you desire but will endeavor to get them. Of this Specimens sent

Jour? Abies balsamea Larix Americana
L. Europaea (I do not remember finding
any under the name of L. pendula)
Picea alba and (of course) Pinus Pumilio
were cultivated. Abies Canadensis &
the remainder native. I have not
noticed any difference in the foliage
of Picea alba.

In looking up the dagittation I find
a var. of P. variabilis for with very
long buds, buttons very different from
the ordinary orbicular or ovate ones;
and thick as far as I have been
able to observe are accompanied with
aquamose or convex heads of fruit as
in the specimen enclosed while the
ordinary form has the achenia
their heads closely compacted into a
somewhat smooth & polished head. I men-
tion this as I have not seen it noticed
in the few works which I have access
I have this flowers of this form and
of var fruiting in alcohol for you.

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I have been desirous, for some time
of meeting some one who could give
me the plants of Missouri and the
country Northward & Southward in
exchange for those of the Eastern por-
tion of the country. If you know
of or should meet with such a
person I should feel much in-
debted if you would place us in correspondence.

(very Respectfully)
Wm. M. Canby

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Rec'd Oct 14th
Ans Oct 16

Philadelphia Oct 8th 1823.

Dear Sir

I am returned from Maryland, & received your favor of the 29th ult. I am glad you are getting of the press. Pentstemon, &c. I am not at all acquainted with, as distinct from Pygidia, but will look more closely at this around here. I notice that Rhapinema keeps them separate. Whatever else I can, that would be of service to you, I will send.

I did not suppose there were any Botanists, who were at present collecting in Missouri — or Missouri. Your Friend Fuse; there might be some one in St Louis or vicinity, who had collected them before the trouble, and might have duplicates & space for Exchange plants.

I shall indeed be truly obliged for

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anything you may send me, if you
can conveniently will permit you to do
so. While down below I collected a
number of interesting plants, several
of which are not in Gray's Manl.
I had intended to put in specimens
of them with the Ferns & Sagittaria
to send to you, but will add other
plants which I collected, & which may
be acceptable on acct of locality, as
as good specimens. The plants not
in Gray are as follows — Hydrocotyle
repanda — Eleocharis tomentosa —
Rhodea Japonica — Mentha — Penthorum
aquatica L or a nearly allied species, —
Alnus — in full flower on Sept. 1st —
Cephalanthus glabellata — Fern, ——
Aristida lanata —

Of other plants, rare & not common-
ly found in our woods, I have Poly-
gonum punctatum — Lythrum alatum
Desmodium bracei frutex D. bracei —
Chrysopsis graminifolia Beautiful species

Eschalum Battecianum &c.

I early engaged a set of Balls' Plants, and have enjoyed that fair collection much. I am exchanging with Mr Ball the present season.

I write from Lud on what I have for you.

Yrs Respectfully &c
Wm. H. Crosby

Dr Geo. Engelmann
St Louis.



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Am Oct 31st
Am Nov 6

Chadsford Oct 27th 1863

Dr Engelmann

Dear Sir

I shall start to-
morrow a package to you by Express
containing such specimens of Pines
as I could procure; some Sarracenias
with some flowers &c in alcohol; and an
assortment of plants principally ga-
thered on the Eastern Shore of Maryland
among which I hope you may
find something interesting. Among
them are some concerning which I
should like to have your opinion;
such as Hydrocotyle Vulgaris (fide Gray)
the Cuscutae, Andropogon argentaeus, &c?
which Chapman calls A. Elliottii &c &c.
Others are merely sent on acc of
being new to the northern States. One
plant Dr Gray thinks is a new species
of the Scirpus! I have not sent many

specimens, not wishing to encumber you with useless luggage. But if you wish anything more I shall probably send a package before long to Mr Hall and could enclose anything you might desire to be forwarded by him.

Respectfully Yours

Wm M. Canby.

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Rec'd Dec 22d
Ans Dec 23d

Haddonfield Penna Dec 15th 1863

Dr Engelmann

Dr Sir

Mr Bolander of California writes me, that he has a parcel of plants for you, one for the Dr, & one for myself. He says that the cacti by express are very high, & wishes to know whether he cannot "come to some understanding about it", I presume with the view of getting them in cheaper; "else" says he "I would propose sending them around Cape Horn". While you be kind enough, as you have had much experience in receiving plants from abroad, to give me your opinion on this subject. Many of the Cacti are received.

The Society was from a tide water shore, - alternately laid bare & covered. I presume the leaves were sent by the mail deposited by the tide. I found no larger specimens. I lately sent Mr Durand some specimens from Delaware, which he pronounces the the

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tum D. Engelmannii. I will try & get some
next summer.

Pinus australis we are probably too
far north for. P. serotina I will endea-
vor to find in future.

Among the plants last sent you, was a
Hieracium, which Dr Gray thought might
be H. vulgatum. On showing it to Durand, he
said "No", and showed me Lamarck's plate,
which certainly did not look like our plant.
But I have since seen in Herb. Darlington,
a specimen from Hooker, and specimen, from
Cape May N.J. gathered by D. Durand, which
seem, the latter especially, much like my plant,
and all labelled H. vulgatum. You must be well
acquainted with this species, and I would feel
greatly obliged for your opinion

Very Respectfully
Wm M. Canby

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Rec'd Jan 18th
Ans Jan 29

Chaddesford Jan. 12th 1864

Dr Engelmann

Dr Sir

I am obliged for your of the 23 ult. With regard to Quercus heterophylla, &c. I have never felt entirely satisfied about it, being a hybrid. Winter ~~this~~ last fall, I had never seen mature fruiting specimens. Last Oct, a friend of mine found a large tree 30 to 40 ft high full of fruit. It was too late to get anything but detached leaves, some of which, with the acorns, I enclose. With my very limited knowledge of Q. aquatica, botanically, I should not have suspected them to be varr. of one species. Q. laurifolia I do not at all know. If you desire, I will try to get specimens of all for you next season.

In looking in some of the Herbaria, but especially, at the, Hydrostyle (so called) Mycaris

& A interrupta. I have noticed forms from the South, which seemed somewhat intermediate. I hope you will look them up. I have no specimen of Gratiola hirsuta, but have heard of it's being found on the Susquehanna, by Mr Minier of Williamsport Pa. I will write to him to see if I can get a specimen for you. I enclose the best specimen I have of the rare V. vulgaris ;, (Maryland), and also one of V. ranunculoides, to show that I have not mistaken that species. Hemes maritima. Muhl. There is nobody in Salisbury who is able to distinguish this from H. serrulata, with which it grows in company. I intend, if possible, to look it up carefully next season. We found it last fall in full flower, every-where, on the 1st Sept. Visiting the same localities in the middle of the same months the stems cattain had all withered, & fallen. If a specimen blooming, why

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showed not the flowers have lasted
until later in the season? Again going
over the same ground on Oct 1st not
preparations been visible for Spiro-
flowering, though the young cattle,
of A. Denudata were well formed.
Glad to have a certification of Ander-
sons Elliottii.

I shall be truly obliged for
the Opuntias, but hope you will
not send them until we get over this
terribly severe weather, or I am
afraid they will never grow. I think
I can send you O. vulgaris in the Spin
Mr Tatnall, though retaining
some interest in Botany, has practically
almost given it up. He is engaged in
the Nursery Business, and I doubt
not finds it better for the pocket than
Botany.

Hastily but truly Yours
Wm H. Saul

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Rec'd May 7th
Ans Octob 18.

Philadelphia Penna May 4th 1864

Dr Engelmann

Dr Sir.

Your letter and the parcel, containing four species of Opuntia, were duly received. Please accept my sincere thanks. I have planted them in a dry sandy place, and hope to see them grow.

Pitt respect to the Pairs. I shall always be glad to be of any service I can.

If you have the work please turn to p. 20 of Marshall, Arbustrum Americanum and for that old Botanist's notice of what must be Opuntia vulgaris, Mühl.; and in which he states, that it flowers in August!

Yours truly
M. Carey

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Wilmington June 16th 1866

My Dear Sir

I write in haste to say that I received your favor this morning, and have just done up and dispatched a package of Insects to Dr. E., I believe all I send to be of the new species, I. Engelm.; but as I got them from 3 different places, I have tied a small string around each lot. Please inform Dr E. of this.

I have not seen the Dr's Monograph of our Insect.

With best wishes

Cordially Yours

J. M. Canby

E Durand, Esq

St. Lawrence Hotel, Phila.

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Rec'd July 3d
Ans'd July 5

834 Market St. Wilmington
June 29th 1861

My Dear Sir,

Your favor of the 28th inst and the copy of St Louis Trans. mailed to Chaddsford reached me the same day. The next day came the copy which you mailed to this place. For this very kind attention I thank you most sincerely, but more than all else, and in common with all our botanists, do I thank you for the effectual cleaning up you have given to our species of the hardly used, and hitherto snarling genus Juncus. I confess for one that I have always had a vague dread of even trying to get the few species. I have collected into any satisfactory state of ...



rangement; not alone because different species were confounded together, but also on acc of the great confusion in the synonimy. It has doubtless been a work of very great labor for you, but now that it is done you must feel repaid by the satisfaction of full success. I should have been most glad to have done anything I could to forward your work. Last year & the year before I was in very bad health but am now much better. A few days since while on a visit to Lewistown Del, with Dr. Leidy & Co, I collected a few species of Juncus, of which I will forward you some in a day or two. Among these is J. dichotomus, Ell. which is



plentiful there. I am very glad to see that you keep the dictums from J. Amis. Mr. Bebb's remarks as to their different appearance while growing are correct. I think not wonder to hear of the species being found in N.J.

Have you sent Mr. Commons a copy of the transactions? If not I might hand him the extra one.

Being on the shore of Delaware river today, I took the opportunity of collecting what we have always considered true Scirpus riparius - in fact it was so pronounced by one a few years since. I send some by same mail as this. I have no roof & put them in but how they may reach you

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tolerably fresh. ~~Do~~ This is in every respect I think, identical with Mr. Durand's plant from further up the river. I find it so you describe the plant I sent you before. The leaves are nearly plane on the upper surface but when fresh I thought there was a slight rise in the middle and depression on each side of it as in sketch of cross section ⊞ these probably caused by the underlying cells with cross partitions. By the way do these Fimbriae from the ale species. The section of bulb, ligulae, &c just as you discuss. I saw no growth of more than two years

Aug. 3d 1866

Is the plant a biennial? Growing one year & fruiting the next? Some of the specimens look as if they must have been very small, (judging from the stalk) last year. As soon as I can I will collect S. Engelmanni and compare. But M. Durieu says I have collected here three species one of which he calls S. amplexicaulis - distinguished by the spores being minutely muricate instead of reticulate. I have not yet been able to identify it, but have it from Mr Boott Esq of Boston. The plants I now send grow in the mud, clay, or gravel, of the Delaware shore, below high water mark about 1/3 imbedded - leaves always erect somewhat fan like in arrangement

above the mud (up & down stream) which I attribute to the tidal action. The other plants, first before grew in ditches & swamps when 2/3 was out of the water. The places might be dry part of the year. Leaves, erect. Should think the two possibly grew together - Leaves not floating in water though we have such a choice. Length from 6 to 18 inches - I will look more carefully & get more. Those I sent were from three places - MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS found each lot. Did you notice this? Stems have shown whether the two grew together or not. I am much pressed for time & must close but will always be glad to do the best I can for you. Truly Yours Wm M. Canby



Rec'd July 16th
Ans'd July 13
834 Market St. Wilmington Del

July 12 1866

My dear Sir,

I have your favor
of 5th inst., and send to day some
specimens by same mail as this: but
first as to Isoetes.

In three packages parcels in one
package I sent first, were from
three different localities; but all
grew alike and in similar stations.
The leaves are always erect under
when the water is very shallow, &
even when I got them 2/3 to 3/4 e-
merged. I once found a plant
which grew in shallow water, (a
ditch), in which the leaves were
very flaccid, & spread out in
every direction on the surface of
the water or just under. I did
not succeed in finding it last

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can but intend to buy this. Mr. Common has sent you one he found this spring on a damp flat on an otherwise very dry shady hillside. I have not seen it now the river-flats &c. is an erect plant at least when uncovered by the tide. So I think I may say that I have seen no intermediate states between that & the stagnant water plant. As I communicate Darwin I can only say that M. Darwin wrote to Mr. Durand that he had received this from Mr. Bolt of Boston and had also got a specimen among others from me. I had had no communication with Mr. Bolt before M. Darwin wrote; neither I think had Mr. Durand. If mistook by mistake I think it must have.

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been by Mr. Durieu.

I am sorry the last lot of plants did not carry as well as the first. The reason was I had no room to put the last in. So far as I can possibly find time I will look up these plants and take notes when collecting & remit to you. Unfortunately I expect to have to go on to N. England (Isles of Shoals) to spend a month or two shortly: this will sadly interfere with many of my plans.

I do not go often now to Rhaddlestone which was the reason I did not get the first copy of Transactions, St Louis Acad. which you sent. I passed the duplicate one to Mr. Commings.

Now for the Insect.

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I find I cannot find time to examine them as I wanted to before sending; & I have collected this year numbering each lot and putting notes of locality below. I few may be of service and the rest can be thrown away, but as I have obtained one of two specimens of each lot I would be glad to have your names for them if not too much trouble. I think you will see among them the real *L. dichotoma*, as well as two other varieties. I wish I could promise to get you them; if I can I will, but for reasons above mentioned it is very doubtful if I can. I am to be on the lookout for Nuphar when collecting.

I enclose my photograph. I dont do this to make you feel under obligation to return yours but if you will I shall

(as you ask for it)

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

Rec'd July 20
Ans'd July 13

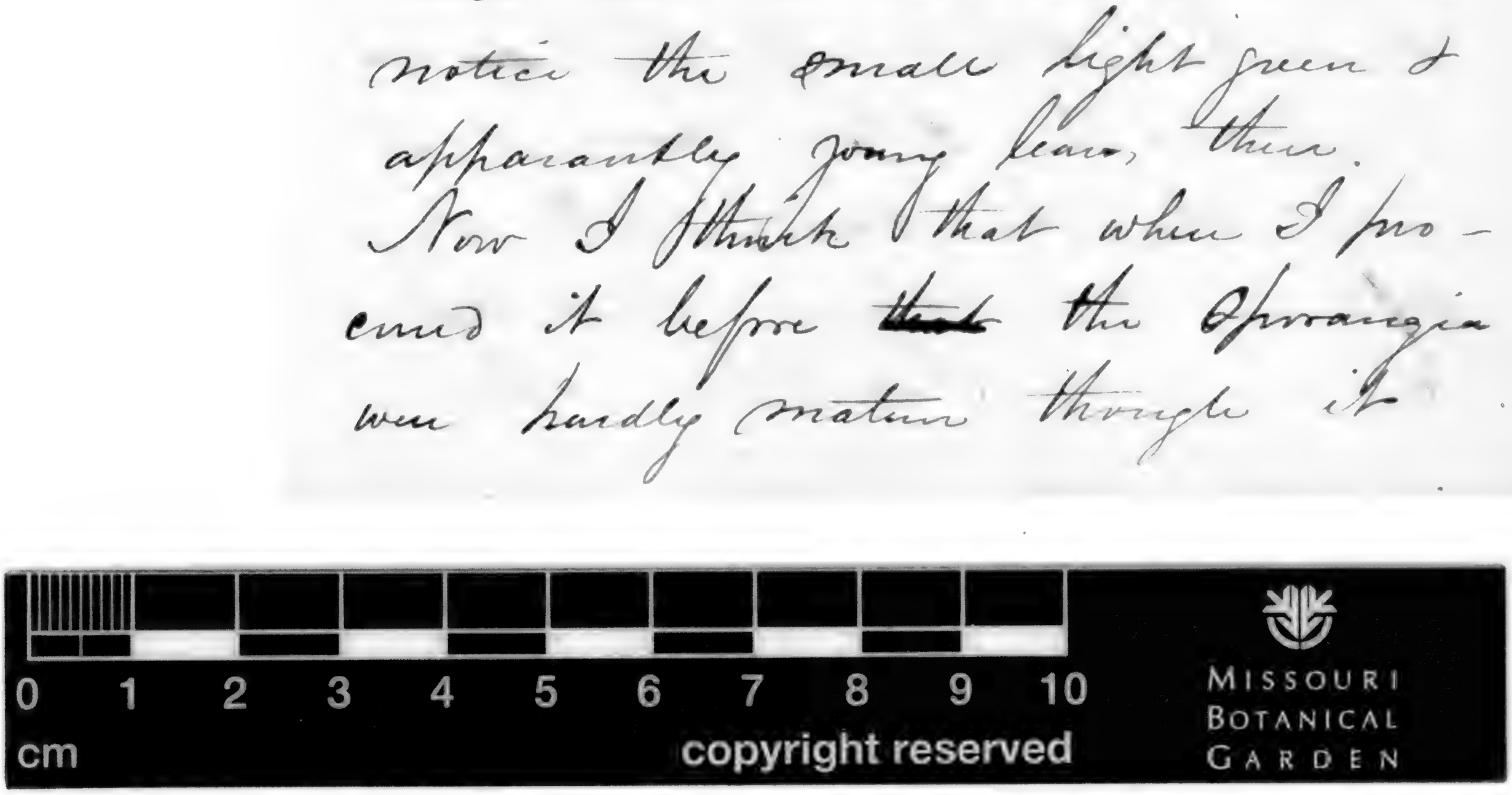
Wilmington July 17th 56

My Dear Dr. Engelmann

Yester-
day I took advantage of the
only opportunity I have had
or probably shall have this season
to go to the ditch I wrote about
when I found Isoetes with flac-
cit leaves. When I went before
it was in the fall as I remem-
ber gathering acorns of Quercus
heterophylla which had fallen
from the tree. Yesterday I
found the late very hot & dry wea-
ther had dried up the water
from the ditch leaving it
only slightly damp and clay
soft in some places. But two
specimens of Isoetes, were found



and these I send today. Not having more I have not cut them up and consequently have not given them older Damping-off. The leaves were now quite neat though I have no doubt at all that these are of the same species, as those I found before in water with the leaves spread in every direction. There is scarcely any trace of the old part of the bulb while the sporangia seem just mature on the outside. But how about those ~~with~~ in the centre. Please notice the small light green & apparently young leaf, there. Now I think that when I pro-cured it before the sporangia were hardly mature though it



must have been the last of Sept.
when gathered. I have wondered
whether it was possible that
these entire sporangia continue
to mature until fall then re-
main dormant through winter &
become fully ripe by in July
at the same time that a young
central growth pushes them off the
crown (as it were). I am aware
that it is said that the outside
sporangia contain the macrospores
while the inside ones contain the
microspores. But I think I
see sporangia containing each
~~the~~ among the outside ones; and
in I within I have seen some
black, the sporangia of which all
contained the smaller spores. You
can judge of all this when

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you cut them up. I remark on other point. The leaves of the vine-side S. riparia seem-ed to be in cross-section nearly semicircular in shape thus ⌒; while those seem more dish shaped, thus ⏝: the air-cavities also seem to me to be larger.

Excuse my cutting, it is necessary for one to be in haste.

Faithfully Yours

Wm M. Canby

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GEORGE ENGELMANN PAPERS

Dr Geo. Engelmann
St Louis, Mo.

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Rec'd July 27
Ans Aug 13

Wilmington July 24th 1861

My Dear Sir

Yesterday I took my last chance to visit the Scuttle-caletias from which I sent you the first lot. Though I could not do as much as I desired on account the approach of night, I collected some which I have put up and send by mail today. First, in the bottom of the box are 5 or 6 large specimens, (two of them very large), from the 2nd localite which I sent from before. The 1st localite is close by, in fact is the same, not being 20 yards from the second, and all in the same swamp. It was too dark to see any thing in it, being more shaded so I got nothing there; but I suppose the plants from these two localities, in the

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first lot sent)
were identical, so it does not
much matter. These plants were in
the mud to the depth to which
the leaves were bleached. Then
was about 2½ inches of water. The rest
of the plant emersed & erect.
Next, lot 2, from the locality
No 3 of the first lot sent; A ditch
now entirely dry. Before, the leaves
were ~~erect~~ erect, now evidently
in consequence of the ditch drying
up, the leaves spread on the ground
in every direction. You will know
this lot containing perhaps 15 to
20 specimens by their long middle
size day 9 to 10 inches high.
Lot 3. from a new locality is wrapped
up in broad printed paper. From
~~the~~ a pond which mostly has water
in, but is now dry. There grew
on the edge & were erect.
Lot 4. from the middle of the

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some pond when, when the lots were in water, the roots of these must be at least 18 inches under water. This lot is wrapped up in narrow blank paper. The old leaves seem to have made decayed, the young ones, coming on. With respect to the leaves of all these plants, they seem to me to be all more or less ruled on the upper surface, the young leaves more than the old. There seem to be some variation, in the shape, &c of the spores and sporecases. But I have not time to examine. I wish I could do more for you here; tomorrow I leave for the Isles of Shoals, Off Portsmouth, N.H., to stay perhaps 2 months. When I come back I shall be glad to look again. I sent a couple of specimens a

few days ago, but have not
heard of their arrival. I
shall be very glad to hear
from you about these plants.
If you write, direct to Appledore
House, Isles of Shoals, Portsmouth
New Hampshire.

Ever Yours Truly

J. M. Canby

Dr. Geo. Engelmann
St. Louis
Mo.

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Rec'd Aug 23
Ans Sept 18

Appledore Isles of Shoals
Off Portsmouth N.H.
Aug. 18th 1886

My Dear Sir,

I have your very interesting letter of the 12th. In answer to your inquiries about the Aconites, No. 1. I have to say that it grew in a small ditch a long the N.P.R. (Baltimore) and that the other, A. Eugelmanni, grew within 10 or 15 yards of it. I noticed on the plants the tuberous roots which you speak of but had not time for critical comparison. I repeat to be home in 2 or 3 weeks and as soon afterwards, as I can will get some more for you.

As you suspected a rain after very warm & dry weather stark-

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ed the central growth in the
largest specimens of S. Engelmanii.
Whence I can obtain an
opportunity I will investigate
the relative number and position
of macro- & micro-sporangia.

Thanks for the localities
of S. lacustris & S. echinospora. It
seems somewhat doubtful now
if I get to the mountains; but
if I do I will get a lot
for you if found.

Will keep an eye to
Naphan too. I have never seen any
with other than yellow flowers.

Are there any salt or brack-
ish water Isoetes?

We have two species Isoetes
& Braunii but not muricata.
The two latter grow in Newbaseth
ton, Delaware. Also have Potion-
tilla Pennsylvanica rivularis, Elymus



Prolli; & other interesting plants.

I shall be glad indeed to get some photographs when convenient to send it.

Have you Sedum Nevii growing? I can send it to you alive if you wish. I got it in S.W. Virginia in 1858.

July 9th

Yrs. M. Canby

Dr. Geo. Engelmann

St. Louis, Mo.

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Rec'd Sept 18
Ans'd 834 Market St Wilmington Del
Sept 15 '66

My Dear Sir

I sent you a few days since a package of specimens of Isoetes collected on the muddy shores of Worcester mass. E. Shore of Md. I have since been attacked by a billious complaint and have been entirely unable to examine some I brought home.

I remember having given some to Mr. Durand. one or two years ago and it * is just possible that the spores of I. riparia which M. Durieu wrote of having received from me may have come from this locality. You can tell at once by examining what spores there already belong to.

I got in chance to get Isoetes in N. England.

I hope to be well enough in a few days to get the strange species with scaled leaves for you.

I am in bed and cannot write more or more legibly

Very Truly Yours Wm M. Canby

Dr. Geo. Engelmann
St Louis Mo.

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Rec'd Sept 25
ans 28 534 Market St Wilmington Del.

Sept. 21st 1861

My Dear Sir

Yesterday I went out and got for you the Sweet ash. you desired to have about this time. I got but few Specimens but I trust they will be sufficient. One of them is a perfect giant - by far the largest Specimen of the genus I have. I hope you may have some to grow as the locality may be sometime destroyed - being only a ditch by the side of a railroad. The package goes today

Yours truly

Wm M. Canby

Dr. Geo. Engelmann St Louis Mo.

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Rec'd Sept 26
Ans — 28 Wilmington Sept 22 '66

My Dear Sir,

Just as I am going away your kind letter arrived. I assume hastily but I hope sufficiently full for your purposes. Soute, Sabbatia grows on the shores of Wicomico river about 1 mile below the town of Salisbury. Maryland. (E. shore) I should have said that the bed is gravel covered over by a very thin layer of mud deposited by the tide. Consequently in such a place the plants are (as in S. virginica) alternately covered and uncovered by the tide. The plant is not gregarious rarely growing less than one inch apart. Soute - Sagittaria pusilla - Tillaea aquatica - Hemianthus micranthemoides, &c. First found Sept.



15th 1863. I am most glad to find it is distinct: for from the appearance of the spores &c. I felt almost certain that it was like nothing that I had seen — But then I had seen very little. I should say that the lobes, were always spread out flat on the ground which I attributed to the mud, settling on them & weighing them down. Still not certain that it ever went to Bunion but think I gathered two or three specimens two years ago.

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GEORGE ENGELMANN PAPERS

S. valida grows 1/8 of a mile below Stanton Station on Phil Wil & Balt R.R. in a ditch on right hand side of R.R. going S. S. saccharata on left bank of river. Mile above former locality, in a day or two. Yours truly Will Canby,

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Rec'd Sept 29th
Ans Sept 4

834 Market St. Wilmington, Del.

Sept. 25th 1866

My Dear Sir,

To day I got Mr. Pattrall to take me around to two or three places, where he formerly got specimens of Porter, but unfortunately we could find none. However, I send today a box containing: 1st, large specimens (S. Engelmanni) from a locality different from those hitherto sent from: 2d— S. riparia from Delaware river-shore: and 3d on top of these I put a small specimen of Boreopsis hidentoides, Nutt! The latter grew plentifully in the place where I gathered it, and instead of being a dwarf plant, as described, and as indeed Nuttall specimen is, it attains to 18 inches, to 2½ ft in height, with a stem either nearly simple or



smoked branched. I send this thinking it might be interesting and the Poets, now because I fear I shall have no opportunity of gathering any more this season.

I how to answer your last letter more fully. I am very glad you are going to describe our species of Poteria. Certainly there is no reason why we should be sending specimens of the ocean, when the thing can be done better at home. I am glad to you have specimens from Mr. Britt, and are now satisfied about S. muricata. If then your letter has been read aright, S. Bramia is the true name of the little New-England species often called S. echinosphora, and we really have not that species at all. Enclose with this a specimen received from Mr. J. Macoun,



of Belleville, Canada West, under the label of "Isoetes lacustris, - Muddy bottoms of ponds, Hastings, Canada West." I have also a plant, which were it with examination I would send, gathered near the summit of Manafield Mt. by Mr. Horace Mann of Concord Mass. It is a larger plant than I. echinospora, and look as if it might be different. Dr. T. F. Allen, of New York City, has also gathered a very pale or yellowish green plant in Litchfield Conn. You can judge whether these are worth sending for.

The history of Isoetes in this part of the country is very total. Specimens had been gathered here prior to 1844, and in a Catalogue published that year, were called I. lacustris L. In the fuller Catalogue, (Datuals), published in 1850, two species are mentioned - viz - I. riparia, and I. Engelmanni - I doubt



whether much was certainly known about these at that time, and think all were probably Engelmanni. Afterwards our river shore riparia was found, and confirmed by you. This was probably about 1861. I cannot remember when I first gathered these species, but think it was this year '61. As for I Bacchanata, I first got it about Sept 1st 1863, and not afterwards, besides this year. I feel almost certain that Mr. Durand got some, but never nothing as to its going to Mr. Durand. That was a mere surmise on my part to account for his saying that he had got a specimen of I. micrata from me. First as I write, I remember that, some years ago, I got some specimens of Boreti,

MISSOURI B
ORGE ENG

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from N. England, and afterwards,
when Mr. Durand requested me to fur-
nish specimens for Durieu, I sent
what I then had. One of these New-
England specimens was probably the
S. muricata he got from me. And
this reminds me of another curious
circumstance. In 1862, I think, I
got some specimens from Mr. Bebb,
which he had received from Mr. Hall.
Some thieves had broken into Mr.
Bebbs house in his absence, and
finding no plunder, set fire to his
boxed up plants. It was discovered
in time to save most of them
before more than the ends were
burnt or scorched. Among the plants,
I got, was S. melanosporda, then
unnamed. He sent to Europe among
the rest and as it came true with
the label, "S. Eyelenianum", I supposed
that like (other plants) the black
bulbs, ~~were~~ had been burnt!

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Mr. Durand told me that this mis-
take caused Gay & Durieu much
perplexity and delay. With regard
to S. bulbosa, unless I have gathered
it some time under the supposi-
tion of it's being Engelmanni, the
first time I ever saw it was when
I gathered the first specimens sent
you -, I believe in June of this year.
So I wrote you before, the locality
has but few specimens, and I much
doubt whether I can get more
this year. I shall be unable too
get more of S saccharata this
year. It grows 140 miles, from here
and circumstances are such that
I cannot get down there this
season again. I hope the riparia
I send today will be as ripe as
you need. All our species grow
scattered, none are gregarious.
I believe now I have answered
all your inquiries, except as to Al-

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maritima.

Yes, I gathered it again in flower, or just out of flower, on the 8th of Sept. — and what is better a plant I moved up to Shaddeford, flowered for me this year for the first time in August. After all I have seen, I have no doubt of its being a regularly fall flowering aleche, though perhaps it occasionally puts out a few catkins in Spring. I have never seen it growing in wet meadows or swamps as our common S. serrulata does; but by the side of running streams or mill ponds.

I shall not forget to send you Sedum Nevii. It is up at Shaddeford.

Whenever I can do anything for you do not fail to ask. Sometimes I am so situated that I cannot

do as much as I desire; but
I am always glad to do what
I can.

Very truly Yours,

Wm. M. Canby

Dr. George Engelmann
St. Louis
Mo.

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Rec Oct 16th
Ans Nov 5.

Washington D. Oct 12th 1866

My Dear Sir

Your letter of
Sept. 28th came duly, but I have been
too much engaged since to answer
it until now. I am very glad
that you were pleased with that
large specimen of Boeta, valida. Truly
It was better it should be in an afternoon
hands than mine, and it was
quite as much pleasure for me
to send it, as for you to get
it. With regard to length of leaves,
as you speak of S. Malmeanna
"20 to 24 inches long", I can say that

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having just gathered some S. Engelmanni, I carefully measured seven-
al specimens, one of which had
leaves 25 inches in length, while
others varied from 21 to 24½. This
was of the ponds, and did not include
the rootstock. Of this, 6 to 8 inches
was in mud. I find all our spe-
cies seem to grow only when there
is a gravel bottom with a coating
of mud. Sometimes, as in S. Engel-
manni alone, the mud is deep,
the ditch being partially filled up
by soil washed down from above. In
other cases, as in the river shore S.
riparia, the mud is the sediment

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dispersed by the tide on a gravelly shore. But I dont find the plants in either fine mud or fine gravel.

In answer to your questions -

Stanton is six miles S.W. of this place.

The water of Nanticoke river is, I believe, always fresh at the point where S. saccharata grows. This point is one mile below the town of Salisbury, which is the head of tidewater. The river empties into Chesapeake bay about 22 or 25 miles below the town. Probably there the water is brackish. As for the Delaware, brackish water extends once in long time and after a heavy



S. C. sale, as far up as the mouth of Christiana ck., (the stream on which this place is situated) which is several miles below the place we get S. riparia

I have got only some ½ dozen halves of S. rotida, having sent all I got to you receipt thereof. I think I have heard of a new, or rather old locality, from Mr. Fatmall, (who desires his best respects to you), and will see to it next season. I have plenty of Eupatorium & riparia, but little of sacchorata. So long as I have any of them I shall be glad to communicate. I enclose Sedum Stenopetalum which should bloom next spring. It came from rocks, on banks of New river

Mrs. H. Landon by Virginia & Ohio Railway & Navigation Co.

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GEORGE ENGELMANN PAPERS

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Ans-Oct 16th Wilmington Del. Oct 13 '66

My Dear Sir. Since I wrote yesterday your last has come to hand. I am glad to see that you may get both together if possible. Mr. Commons specimens were from the same locality as those I sent. His knowledge of them came from me. I have never seen S. rigonia any where but in the shores of the Delaware. Two or three weeks since I ~~found~~ searched for it in a (tidewater) locality on Brandywine & similar to the river shore but could not find it. I know not how far above Phila it grows. But both it and S. saccharata have the appearance of enjoying the tide. I rigonia I have found quite near low water mark, where it must be covered several ft. deep at high water.

With regard to Florida, when I was there two weeks ago I saw plants of Engelmanni from same locality as I sent from early in

MISSOURI BOTAN.
GEORGE ENGELMANN RARE PLANTS

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the season. I noticed on at least one specimen that ~~the~~ a few of the leaves were carinate while the majority were plane. We will look further into this species must season. I did not examine the velum of the above. I dont know how to tell lacustris from another species - in fact have never seen a specimen that was authentic.

J. Macoun. Belleville, C.W.

Will send more Coreopsis. It is very difficult to get it with lower leaves on as they rot off before the plant flowers.

Very truly Yours

Wm M. Canby.

Rec'd Oct 12
Ans. Nov 22

634 Market St. Wilmington. Del.
Nov. 8th 1886

My Dear Sir,

I have yours of the 5th inst., and am glad Mr. Burt has been of such good service to you, and sorry Bolander has been so tantalizing.

I will send you specimens of the S. Engelmanni I got in Oct. soon. As the ditch always has water in I suppose the plant, could hardly be called a dwarf growth and if I am not mistaken they are true as above, having the adnating bases of S. Engelmanni and flat leaves.

Christiana ck was, as you say, named after queen Christina, but is now always called as a-bove or sometimes smaltly Christeen. Probably the objection of the county

by the Dutch and its subsequent
cession to the English may have
caused the corruption of the name.
The Swedish settlement was called
Christina Hamm but was, afterward,
named Willingtown after an English
man Willing & and was then cor-
rupted to Wilmington.

I detected Cuscuta
Indecutinda in one Delaware locality
last year. Telling Mr. Commons of
it, he went to get some this
year and found some plants with
smaller very flowers! He sent me
a fragment of a specimen which
I sent to Dr. Engr, and has promis-
ed me seeds for yourself and
others.

All our Sorbi, die down
in winter and sprout again as
warm weather comes on. We have
detected no submerged ones such
as the N. England species.

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Mr. Tatnall is now engaged in the Nursery business and is devoted to it and I hope doing well in a pecuniary way. I believe he has named cultivated the Sagittaria variabilis, var. flore pleno, and has very much given up Botanical pursuits.

Very Truly Yours,

Wm M. Canby

Dr. Engelmann
St. Louis
Mo.

D.D. I have been hoping for a year or two to find some one who collects Sarcostemma this way in order that I might get a good specimen or two for comparison. If you know of such a one will you be kind enough to give me his address when you have occasion to write again?

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Rec: Nov 30
Ans Dec 14

Wilmington Dec 27 1766

My Dear Sir,

I have your, of 22d, today, and while I have time & think of it, will answer. I illustrate replies to your questions of locality, &c, I have drawn a rude map of Newcastle Co in this state. The Christiana Ck coming from the west, and the Brandywine from the North, unite at Wilmington, and soon reach the Delaware. The first flows through a comparatively level country, the character of which is well indicated by the name of one of the small streams, viz White Clay Creek. This White Clay is sometimes very stiff (pure), and sometimes intermixed and more or less mixed with patches of gravel or sand. This county extends almost throughout the county below the range of hills, marked on the map, and is dotted all over with depressions which are very often pools, or swamps, and in which grow many of our choicer plants, which are not found in the hilly or rolling country in the Northern part of the county. The latter however ~~in~~ which ~~are~~ is a strictly prim

tine formation, produces a good many plants, whose range extend, much farther north. Of another character still are the alluvial meadows or marshes along tide-water. We may perhaps well consider another, to be the shores of tidewater streams. We may then say that our county flora is made up of plants of 5 pretty well marked and distinctive classes or floras, viz - 1st the flora of the flat clay or sandy part, which might be distinguished as the Magnolia district, as that tree is universally found there and nowhere else. Here are also found many of New Jersey & Southward plants, such as Asagraea Stans, Canna gigantea &c &c. 2nd The hilly district in which is found most of the Pennsylvania plants of Darlington's Flora, and some Mountain ones. 3d the alluvial meadows, which contain nothing remarkable 4th The tidal shores, on which grow Nuttall's "tidal mud flora" and 5th (not mentioned) above the salt water district in the S.E. part of the county where are found Bryzopyrum, Spartina juncea, &c. It is with the 1st and 4th of these that

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we have nine to do. Now in 4th district, at the place marked 1 on the map, Isoetes riparia grows and in this district are also found many of the plants you mention viz: Eriocaulon, Elatine, Sagittaria pusilla, and calycina, (the latter I have also found on tidal mud at Princess Anne Md.) &c. I lacchanatu also grows in the same kind of a district 150 mile, away and here too are found all the above except S. calycina and in addition Tillaea simplex, Hedyotis, Montia &c. There 2 species of Isoetes, therefore decidedly belong to the tidal mud flora.

The other two, Engelmanni and valida, belong to the clay district, but so far as I have observed are only, or at least mostly, found where there is more or less of a gravelly bottom. The original I. valida { grows at 3 on the map; here I got the large specimen I sent you; but close by, I got specimen, which you pronounced I. Engelmanni. At No. 4 on map I got the early ripe (June) Engelmanni. There is no valida there. But at 2. is the swamp where the Oc-

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taken specimens were gathered. Now at this place only, so far as I know, S. validus and S. Engelmanni grow together. At 2. 3. 04. the plant, all grow in ditches. At 2 I have gathered specimens, from the same ditch, some of which you have pronounced one plant and some the other, and some specimens I am very certain that I have got some specimen, there in Oct., some of which had keeled leaves, and other flat ones. As to the leaves, of the last specimens I cannot say. Whether they were flat or keeled These plants, all grow in the same ways, that is a, in the



bulb, resting in gravel or sandy clay, the mud 5-6 inches, on this, then ½ to 2 inches, water & the remainder say 3/5 of the length covered.

The swamps around are Magnolia Sphagnum, or Cranberry swamps. Other characteristic plants, are Rhus venenata, Solidago

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

regneta &c.

I have no doubt that both species, continue to ripen spores throughout the season in favorable situations, though Engelmanni may be the ~~first to~~ earliest ripe. I hope most you

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I may have a chance to examine more closely and take fuller and more accurate notes, than I could do during the past season. Oftentimes I had hardly time to get the specimens, and no time at all to examine them. At all events, let me know whenever you wish me to do anything, and if it is possible I will attend to it.

One point while I think of it. How the relative lengths and breadth of the sporangia any thing to do with diffusum of I. valida and I. Engelmanii or do these vary with age in both species. My impression is in favor of the latter.

Thank you very much indeed for the promised set of European Isoetes. I dont know any thing it could give me more pleasure to have.

Oh, I had forgotten to say that Mr. Commons' few specimens of I. Engelmanii, gathered on the rocky hill-side along Brandywine Ck., are the only ones

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get found in the hilly district.

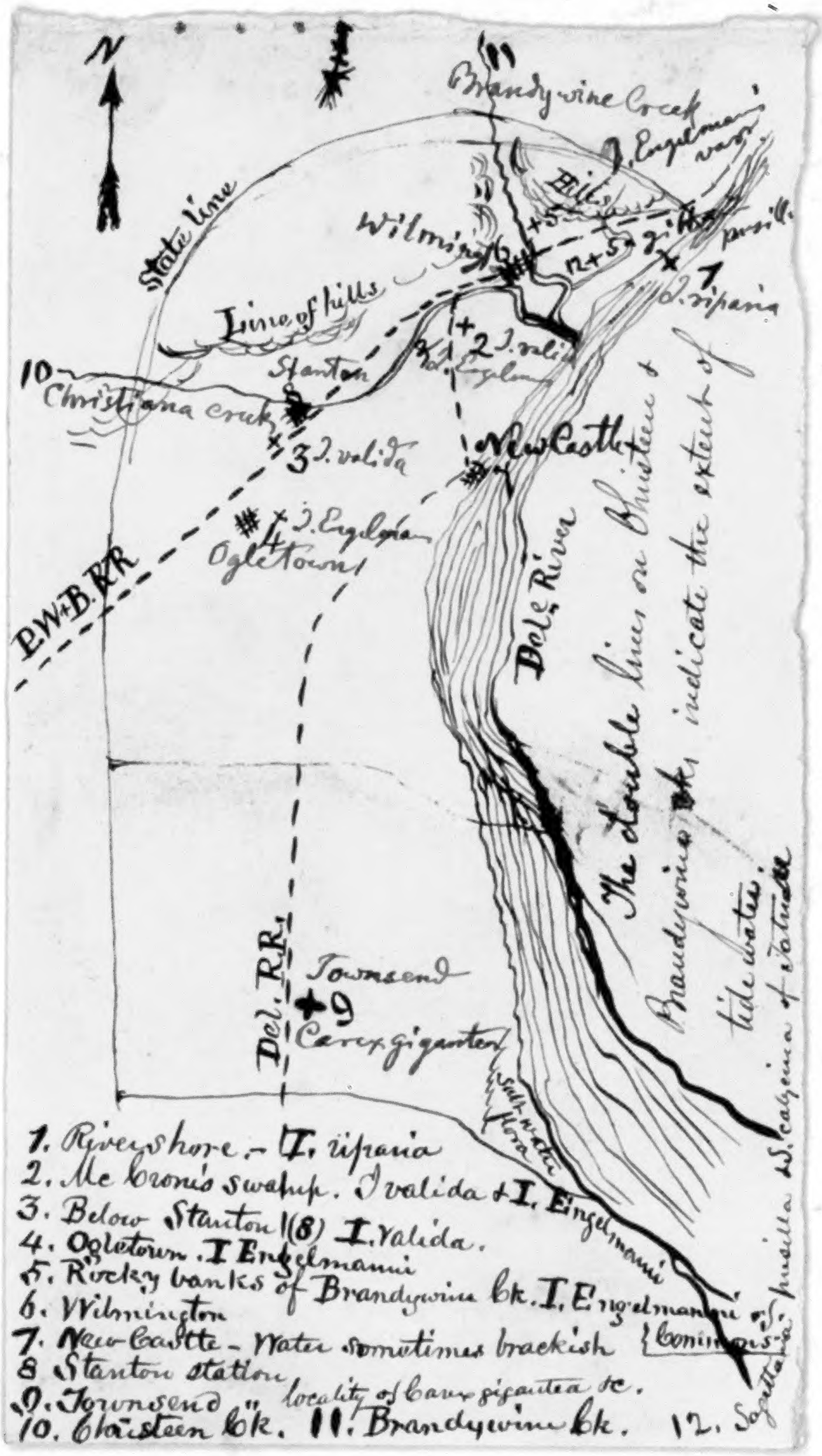
Very truly Yours

Wm M. Canby

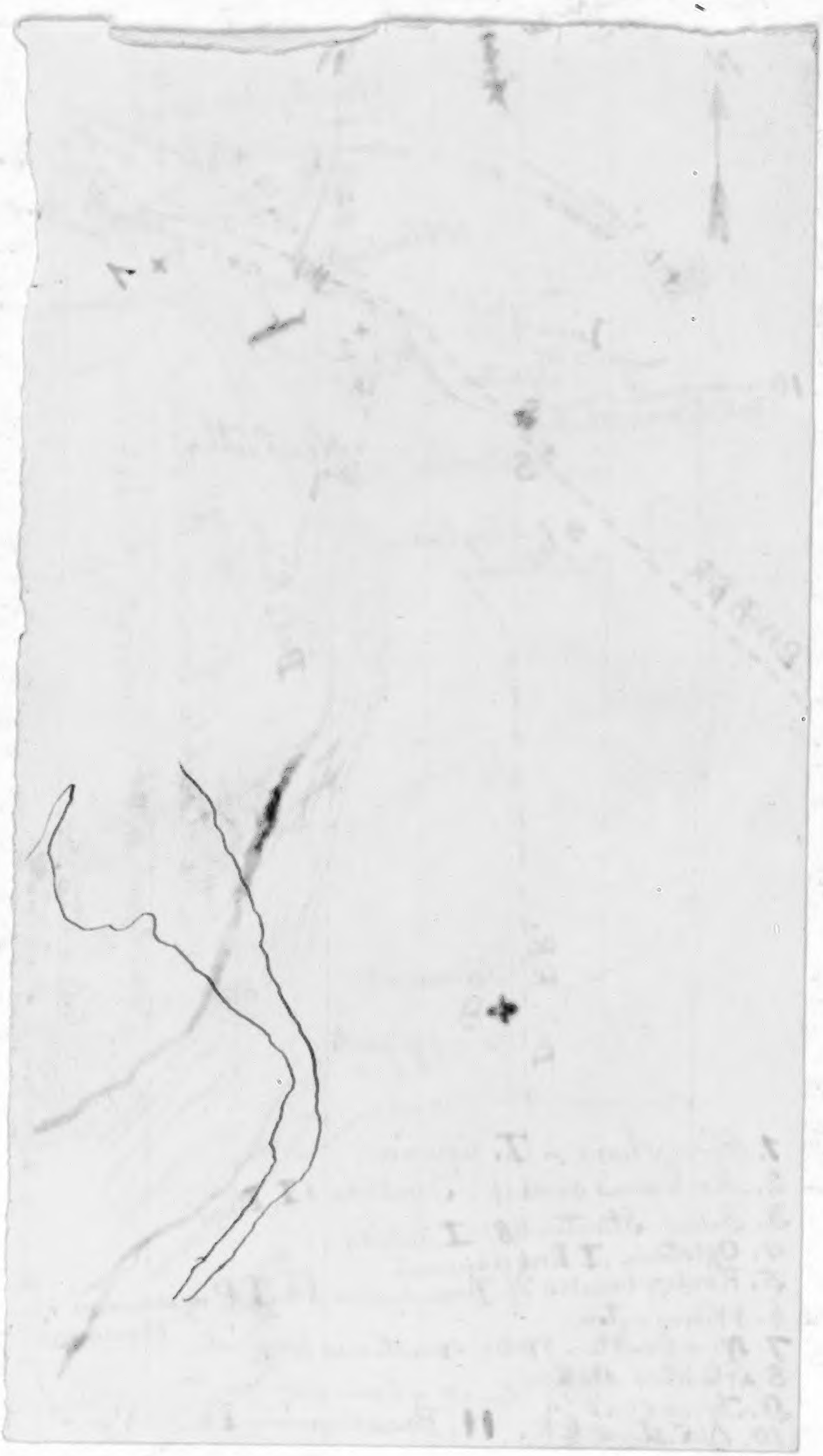
Dr. Geo. Engelmann

St Louis

Mo.



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